

CLAIMS

1. A method for recovery of metals, in particular copper, from copper-bearing raw material that contains iron and sulphur, where said raw material is leached into an aqueous solution of copper chloride and hydrochloric acid, whereby iron and sulphur remain in a deposit formed in leaching, **characterized in that** the redox potential of the copper-containing raw material leach is adjusted using a feed of an oxydating agent to the range of 480 – 500 mV with regard to an Ag/AgCl electrode, whereby copper and other valuable metals in the copper chloride solution coming from leaching are mainly divalent, the cupric chloride solution is fed to a liquid-liquid extraction, with which copper is separated from the chloride solution and is transferred in stripping to an aqueous solution of sulphuric acid, which is fed to electrowinning for recovery of elemental copper.
2. A method according to claim 1, **characterized in that** the oxydating agent is oxygen.
3. A method according to claim 1, **characterized in that** the oxydating agent is air.
4. A method according to any of the above claims, **characterized in that** the extraction of the cupric chloride solution is performed in two stages.
5. A method according to claim 4, **characterized in that** a part of the aqueous solution coming from the first extraction stage is fed back to the leaching of the copper-bearing raw material.

6. A method according to claim 4 or 5, **characterized in that** the part of the aqueous solution fed to the second extraction stage is neutralized before being fed to said extraction stage.
- 5 7. A method in according to any of claims 4 – 6, **characterized in that** the extraction stages operate in parallel connection in relation to the organic solution.
8. A method according to any of the above claims, **characterized in that**
10 the extraction temperature is a maximum of 40°C.
9. A method according to any the above claims, **characterized in that** the aqueous solution of sulphuric acid fed to stripping is a return acid from copper electrowinning.
- 15 10. A method according to any of the above claims, **characterized in that** the other valuable metals in the copper-containing raw material such as nickel, cobalt and zinc are precipitated from the aqueous solution after extraction using alkali hydroxide precipitation.
- 20 11. A method according to any of the above claims, **characterized in that** the copper-bearing raw material contains precious metals such as gold and/or platinum group metals (PGM).
- 25 12. A method according to claim 11, **characterized in that** gold and/or platinum group metals (PGM) are made to precipitate in connection with raw material leaching in sulphur and iron precipitation and are recovered from the deposit during sulphur flotation.
- 30 13. A method according to any of the above claims, **characterized in that** the pH value in the copper-bearing raw material leaching is at least 1.5.